

DELAWARE DEPARTMENT  
OF TRANSPORTATION

F.Y.I.



## Delaware's Integrated Transportation Management System

*Managing Delaware's  
Transportation with Technology.*

A CLOSER LOOK...



#5  
IN A  
SERIES

# DelTrac Saves Time... Saves Money... Saves Lives




Technology has revolutionized the way we communicate and forever changed the way we do business. Now technology is revolutionizing the way we approach transportation issues. And Delaware is taking the lead.

Using satellites, sensors, cameras, fiber optics, wireless, the internet and a wide array of new technologies, DelDOT's DelTrac Integrated Transportation Management System provides efficient ways to manage the movement of people and goods in real-time... on our highways, on transit, at our ports, airports and stations, and through programs that encourage walking, biking and ride sharing.

It also encourages a new way of thinking that crosses agencies, jurisdictions and other boundaries to make possible our vision of a more Livable Delaware.

DelTrac is being integrated into all phases of transportation planning and development at DelDOT. Though we will always need to build new roads, add

new transit routes and facilities and upgrade our commercial freight handling capabilities, managing transportation with technology helps extend the life of our existing transportation system and makes it more efficient.

A vertical stack of three circular images. The top circle shows a clock face with the time around 10:10. The middle circle shows several US coins. The bottom circle shows a close-up of a woman's face, smiling.

### ***Saves Time***

Every minute a roadway is blocked causes 5 minutes of delay.

### ***Saves Money***

DelTrac allows us to spend \$ more efficiently, & across more miles & modes.

### ***Saves Lives***

There are over 20,000 crashes in Delaware each year. Reducing congestion reduces accidents and saves lives.

# Working Towards a More Livable Delaware

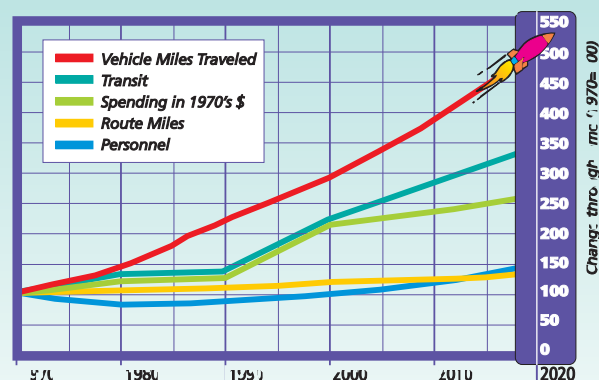
Transportation demand is increasing at a far greater rate than our current supply, and transportation congestion is decreasing safety and efficiency. In addition to continuing to build roads and other infrastructure, we need the efficiency and immediacy DelTrac offers.

DelTrac is being mainstreamed into every phase of DelDOT's operations and planning. At the heart of the DelTrac program is our Transportation Management Center (TMC). The TMC operates 24-hours-a-day from the Statewide Emergency Operations Center. In the fall of 2002, the TMC will be operating from a new adjoining, state-of-the-art facility. It deals in far more than just traffic management,

although providing ways to manage congestion is a part of what the TMC does. The TMC expedites movement of buses and trains, consults with other agencies such as the police and fire companies during emergencies and special events, and provides real-time information about transportation to

## The Challenge:

- Over 20,500 Traffic Crashes Yearly
- New Roads Up Only 7% While Traffic Has Doubled
- Congestion is Destroying Our Quality of Life



*Demand for transportation services has increased dramatically.*

field operations and to the public through traffic advisory radio, dynamic message signs, the Web and other evolving technologies.



*The TMC links transportation modes and information.*





# DelTrac Technologies (Existing & Planned)

## **TMC** Transportation Management Center

The TMC is the central facility that houses the system hardware, application software, telecommunications, and personnel required to operate and maintain Delaware's DelTrac Integrated Transportation Management System. It monitors and responds 24-hours-a-day, 365 days a year.

### **A** Traffic Adaptive Signal System

Provides real-time control and monitoring of the statewide traffic signal network. Makes automated adjustments to signal timings and operations based on current and projected traffic conditions.

### **B** Transit Schedule Adherence/AVL System

Provides the base platform for an "on demand" transit system. Through the use of mobile data terminals using real-time information, transit drivers are continually aware of their schedule and can adjust accordingly.

### **C** Transit Priority Treatment System

Traffic signal timing can be adjusted in real-time, making it possible to give priority treatment to transit vehicles throughout the state.

### **D** Video Monitoring System

Real-time video cameras provide instantaneous information to the TMC. This is supplied to information systems, like the web, radio, television, kiosks, etc.

### **E** Electronic Detection System

Field detection technologies provide data on the condition, use and performance of the transportation network. Data automatically adjusts DelTrac systems such as Dynamic Message Signs, radio and web-based applications in real-time.

### **F** Aerial Monitoring System

The aerial monitoring program provides real-time monitoring and management of transportation systems using trained observers in aircraft equipped with 800 MHz radios.

### **G** Motorist Assistance Patrol

Motorist Assistance patrols rush hour and construction-related congestion areas in specially equipped vehicles. They offer motorist assistance, assist at incident scenes, and communicate problems and observations to the TMC.

### **H** #77 Cellular Reporting Service

The #77 system allows any motorist with a cell phone to report traffic problems, disabled vehicles, and incidents toll free.

### **I** Weather/Flood/Road Surface Monitoring

Sensors embedded in pavement, on towers or poles, monitor road surface and weather conditions along critical sections of the transportation network.

### **J** Electronic Toll Collection

E-ZPass™ allows vehicles to pass through the tollbooth without stopping. Electronic tags installed on vehicles store account information which enables the electronic deduction of tolls from prepaid toll accounts.

## **K** Electronic Payment System

Special debit cards (Smart Cards) will be good for bus or rail fares, highway tolls, parking, or even university parking access. All will be handled through a regional electronic payment system.

## **L** Interface to Police/Fire Computer Aided Dispatch

DelTrac interfaces with local police and fire Computer Aided Dispatch systems. TMC is automatically made aware of incidents and, in turn, provides police and fire personnel status information on the transportation system.

## **M** Draw Bridge Monitoring

Alerts TMC operators to openings and closings of draw bridges statewide.

## **N** Automated Commercial Vehicle Operations

Assists trucks and buses in moving people and goods safely through Delaware. DelDOT participates in the multi-state I-95 Corridor Coalition's Information Exchange Network (IEN).

## **O** Telephone Information System

Allows travelers to dial into a central telephone system for updated information about travel conditions statewide.

## **P** Travelers Advisory Radio System

DelDOT's 1380 AM -WTMC radio station updates travelers on roadway and transit conditions so they may make informed decisions and avoid congested areas.

## **Q** Dynamic Message Sign System

Fixed and portable electronic signs warn of congestion, accidents and other conditions, allowing travelers to take alternate routes.

## **R** Kiosks

Interactive freestanding information kiosks will access DelDOT's real-time web site providing traffic info and transit schedules. Kiosks will be placed at employment and transit centers and other key locations statewide.

## **S** Real-Time Web Site

Provides real-time information on travel conditions, incidents, congestion, construction, travel time, transit schedules, weather and event information. Offers streaming video from the video system.

## **T** Bus/Rail Stop Information System

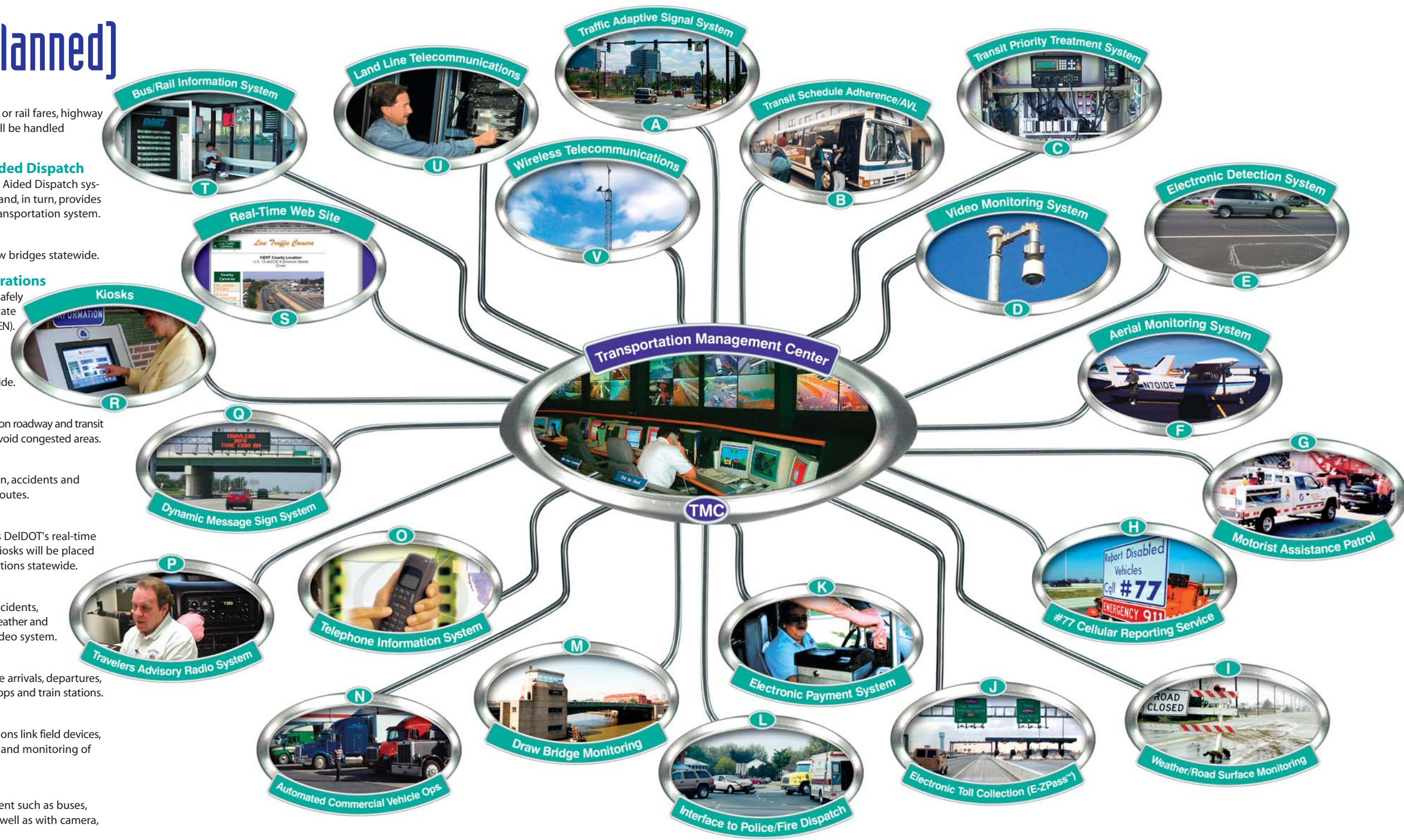
Provides transit users with real-time information on the arrivals, departures, and on-time performance of buses and trains at bus stops and train stations.

## **U** Land Line Telecommunications

New fiber-optic cable and existing copper communications link field devices, the TMC and other facilities to allow real-time control and monitoring of the transportation network.

## **V** Wireless Telecommunications

Allows communication with field and mobile equipment such as buses, paratransit, maintenance and supervisory vehicles, as well as with camera, traffic signals and other DelTrac devices.



# DelTrac Benefits

## Computerized Traffic Signal System

- Travel Time decreases by 8 to 10%
- Travel Speed increases by 14 to 20%
- Delay decreases by 17 to 37%
- Number of Stops decreases by up to 35%
- HC Emissions decreases by 4 to 10%
- CO Emissions decreases by 5 to 13%
- NOx Emissions decreases by 4%
- Fuel Consumption decreases by 6 to 12%

## Incident Management

- Incident Clearance Time decreases by 5 to 8 min.
- Travel Times decreases by up to 42%
- Vehicle Delay decreases by up to 300,000 hours/yr.

## Traffic Information

- Travel Time decreases by 17 minutes (20%) in incidents
- Delay decreases by up to 1900 vehicle-hours
- HC Emissions decreases by 25% for diverted drivers
- CO Emissions decreases by 33% for diverted drivers
- NOx Emissions decreases by 1.5% for diverted drivers

## Transit Management

- Travel Time decreases 15 to 18%
- Fleet Efficiency increases 4 to 13%
- On-time performance increases 12 to 28%
- Incident Response Time decreases up to 50%

## Transit Signal Priority

- Travel Time decreases 5 to 8%



## This FYI Brochure and other subjects below are brought to you as a public service by the Delaware Department of Transportation.

Transportation is an important and complex subject that impacts the lives of every citizen of our state as well as visitors, travelers and interstate commerce. It is our wish to help Delawareans understand the many processes of transportation so they may be informed, and if they wish, become involved in the continual process of improving, and when necessary, expanding our transportation system.

### See more FYI Brochures on these topics:

- #1 The Capital Improvement Program and the Council on Transportation** What are they? How do they work? How can the public get involved?
- #2 Corridor Capacity Preservation Program** What's being done to make sure existing roads can handle future economic growth?
- #3 Access Management** How can managing access reduce congestion, improve safety, preserve economic development opportunities and extend a road's service life?
- #4 Transportation & Delaware's Future** Highlights of DelDOT's Long-Range Transportation Plan
- #5 DelTrac - Delaware's Integrated Transportation Management System** Managing Delaware's Transportation with Technology.
- #6 Understanding the Pipeline Process** How ideas, plans and suggestions for transportation projects move from concept to completion.
- #7 Public Involvement** How you can be involved in shaping transportation decisions.
- #8 Highway Safety Improvement Program** How targeting improvements to high-accident sites is reducing the likelihood and severity of accidents on Delaware's roads.
- #9 Customer Satisfaction Surveys** Important feedback helps us serve you better. We're listening.

### To receive one or more of the above brochures write or call:

External Affairs  
 Delaware Department of Transportation  
 P.O. Box 778  
 Dover DE 19903

Phone 1-302-760-2080  
 in-state call toll free 1-800-652-5600

For more in-depth information on many topics visit our website at [www.deldot.net](http://www.deldot.net)

For specific information on DelTrac contact



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